The Office Action objects to the drawings under 37 C.F.R. §1.83(a). Specifically the Office Action alleges that the feature recited in claim 6 whereby "set output ends of said Δ-connection winding are distributed at an end surface of said stator core in an angular range that is more than 180°" must be shown in the figures or the feature canceled from the claims.

Applicant asserts that the angular range recited in claim 6 is clearly shown at least in Fig. 6. Specifically, the three connection ends 26A, 26B and 26C of the three phase winding 23A are distributed over an area wider than 180° in angle. Furthermore, 37 C.F.R. §1.83(a) merely requires that the drawings of a non-provisional application show every feature of the invention specified in the claims. There is no requirement that every feature specified in the claims be labeled with a reference character.

However, as discussed during the personal interview, Fig. 6 is amended by the attached Request for Approval of Drawing Corrections in reply to the objection by adding a reference character further identifying the recited feature. The specification is also amended to reflect the added reference character. Thus, as agreed during the interview, the correction to Fig. 6 overcomes the outstanding rejection. Accordingly, withdrawal of the objection to the drawing is respectfully requested.

The Office Action objects to the specification. Specifically the Office Action objects to the Abstract of the Disclosure because the Abstract recites the word "comprises". The Abstract is amended in reply to the objection.

The Office Action objects to claim 8 as including an informality. Specifically, the Office Action alleges that "said another three-phase winding" on line 4 of claim 8 lacks antecedent basis. As discussed and agreed during the personal interview, the cited recitation of claim 8 finds antecedent basis in amended claim 6 from which claim 8 depends. Thus, Applicant respectfully requests the objection to claim 8 be withdrawn.

Claims 3 and 6 are rejected under 35 U.S.C. §112, second paragraph. The rejection is traversed.

As discussed and agreed during the interview, the rejections under §112 overcome by the amendment to claim 3 and the discussion of the angular range during the interview. Thus, Applicant requests the rejection of claims 3 and 6 be withdrawn.

Claims 1 and 2 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,686,774 to Slavik et al. (Slavik). As claim 1 is canceled the rejection of that claim is moot. However, as stated above the subject matter of claim 1 is incorporated into claim 6. Accordingly, Applicant traverses the subject matter of claim 1 as recited in claim 6 as well as the rejection of claim 2.

The Office Action admits that Slavik does not disclose or suggest output ends of a Δ-connection winding distributed at an end surface of the stator core in an angular range that is more than 180 degrees. Thus, as discussed during the personal interview, Slavik does not disclose a rotary electric machine including a stator core, an armature winding mounted in the stator core, wherein the armature winding comprises a plurality of the three-phase windings, one of which is a Δ-connection winding having output ends that are connected in series with respective phase-winding of another three-phase winding, and the output ends of the Δ-connection winding are distributed at an end surface of the stator core in an angular range that is more than 180 degrees, as recited in amended claim 6 which has been amended to include the subject matter recited in canceled claim 1.

Rather, Slavik discloses a three phase motor armature winding arrangement designed to reduce motor vibration and improve efficiency. Although Slavik discloses a Δ winding portion 46 connected in series with the wye winding portion 48, Slavik does not disclose the angular range of the distribution of the output ends of the Δ connected winding on an end

surface of a stator core, as recited in the rejected claims. Accordingly, Applicant respectfully requests the rejection of claims 1 (as it might now apply to claim 6) and 2 be withdrawn.

Claims 4, 5, 8-10, 12 and 13 are rejected under 35 U.S.C. §103(a) as unpatentable over Slavik in view of U.S. Patent No. 5,936,326 to Umeda et al. (Umeda). The rejection is respectfully traversed.

Applicant asserts that neither Slavik or Umeda, whether considered alone or in combination, disclose or suggest each and every feature recited in the rejected claims. As admitted in the Office Action, Slavik does not disclose or suggest output ends of a Δ-connection winding distributed at an end surface of the stator core in an angular range that is more than 180 degrees. Furthermore, Umeda does not disclose or suggest either a Δ-connection winding or output ends of a Δ-connection winding that are distributed at an end surface of the stator core in an angular range if it is more than 180 degrees. Accordingly, Applicants respectfully request that the rejection of claims 4, 5, 8-10, 12 and 13 under 35 U.S.C. §103(a) be withdrawn.

Claims 3 and 11 are rejected under 35 U.S.C. §103(a) as unpatentable over Slavik in view of U.S. Patent No. 4,144,470 to Auinger. The rejection is respectfully traversed.

Applicant asserts that claims 3 and 11 are allowable for at least their dependency on claims 6 and 9, as well as for the additional features recited therein. As admitted in the Office Action, Slavik does not disclose or suggest output ends of a Δ-connection winding distributed at an end surface of the stator core in an angular range that is more than 180 degrees. Furthermore, Auinger does not disclose or suggest a rotor electric machine...wherein output ends of the Δ-connection winding are distributed at an end surface of the stator core at an angular range that is more than 180 degrees.

Rather , Auinger merely discloses a pole changeable three phase winding for a fractional pole pair ratio of the first and second numbers of pole pairs. However, Auinger is

silent regarding the arrangement of output ends of a Δ-connection winding. Thus, Auinger does not overcome the admitted deficiencies of Slavik. Accordingly, Applicant respectfully requests the rejection of claims 3 and 11 under 35 U.S.C. §103(a) be withdrawn.

Claims 6 and 7 are rejected under 35 U.S.C. §103(a) as unpatentable over Slavik and further in view of U.S. Patent No. 6,469,413 to Oohashi et al. (Oohashi). The rejection is respectfully traversed.

The Office Action admits that Slavik does not disclose or suggest output ends of a Δ-connection winding distributed at an end surface of the stator core in an angular range that is more than 180 degrees. To overcome the admitted deficiency the Office Action combines Oohashi and alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Slavik by combining it with Oohashi. Specifically, the Office Action alleges that Oohashi discloses the winding in an alternator distributed in the end surface of the stator core in an angle of 180 degrees at col. 6, lines 18-34. However, Oohashi merely discloses first and second windings subportions disposed so as to be inversely wound and offset by an electrical angle of 180 degrees. As such, Oohashi does not disclose or suggest a Δ-connection windings that are distributed on an end surface of the stator core in an angular range that is more than 180°.

Furthermore, as discussed during the personal interview, one skilled in the art would readily understand that the output ends of the Δ-connection windings are distributed on the end surface of the stator core in a mechanical angular range. Thus, the electrical angle disclosed in Oohashi does not correspond to the angular range recited in the rejected claims.

Additionally, although Figs. 7 and 12 of Oohashi show output ends of two star-connection windings that are distributed in a range of about 180°, the star-connection windings are not connected to each other by those output ends. In other words, Oohashi does not disclose or suggest a Δ-connection winding having output ends that are connected in

series with respective phase windings of another three phase winding. Accordingly, neither Slavik or Oohashi whether considered alone or in combination disclose or suggest all of the features recited in claims 6 and 7. Thus Applicant respectfully requests the rejection of claims 6 and 7 under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing, reconsideration of the application is requested. It is submitted that the claims as presented herein patentably distinguish over the applied references and fully meet the requirements of 35 U.S.C. §112. Accordingly, allowance of claims 2-14 is respectfully solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,

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Attachments:
Appendix
Request for Approval of Drawing Corrections

Date: February 6, 2003

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